SOV/56-36-2-56/63

The Polarization of the Flux of μ^+-Mesons at Sea Level

the dependence of the polarization degree on the energy of the muons, information concerning the production mechanism of high-energy muons can be found. The authors thank Professor A. I. Alikhanyan for his constant interest and for useful advice. There are 4 references, 1 of which are Soviet.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut
(Moscow Engineering-Physics Institute)

SUBMITTED: July 31, 1958

Card 3/3

S/058/61/000/010/024/100
A001/A101

AUTHORS: Dolgoshein, B.A., Luchkov, B.I., Ushakov, V.I., Asatiani, T.L., Krishchan, V., Matevosyan, Ye., Sharkhatunyan, R.

TITLE: On polarization of μ -mesons of cosmic radiation

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 97-98, abstract 10B516 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v. 1", Moscow, AN SSSR, 1960, 319 - 321)

TEXT: Polarization of μ -mesons was determined from asymmetry of angular distribution of positrons at stops and decays of μ -mesons in copper. The μ -mesons with momenta of 0.35; 1.05; 1.5, and 2.0 Bev/c were measured. The respective values of polarization are as follows: 0.21±0.08; 0.35±0.087; 0.52±±0.083 and 0.50±0.09. The relation obtained between the polarization degree of μ-mesons and their momenta is briefly discussed.

L. Dorman

[Abstracter's note: Complete translation]

Card 1/1

69071

21.5300

S/120/60/000/01/009/051
E192/E382

AUTHORS: Dolgoshein, B.A., Luchkov, B.I. and Ushakov, V.I.

TITLE: Operation of Gas-discharge Counters at Large Pulsed Overvoltages

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1, pp 39 - 42 (USSR)

ABSTRACT: The experimental equipment used in the investigation described was as follows: a set of two G-M counters connected to a coincidence circuit were used to register cosmic particles. The resulting coincidence pulse operated a generator producing a supply pulse having a duration of 0.3 - 4.5 μs and an amplitude up to 3 kV. The supply pulse was applied to the investigated counter which was situated between the two "coincidence" counters. The pulse generator was based on the circuit described in Ref 1 and also on a hydrogen-thyratron furnished with a forming line. The delay between the supply pulse and the instant of appearance of a particle could be varied from 0.7 to 50 μs. The load of the counter was 30 kΩ. When the pulse duration was 0.3 μs, the pulse was triangular and had a rise time of 0.1 μs

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Operation of Gas-discharge Counters at Large Pulsed Overvoltages

and a decay of 0.2 μs. At longer durations the shape of the pulse could be regarded as being rectangular, its rise time being 0.1 μs. The above equipment was used to investigate the properties of the counters, types MS-9, GS-9 and GS-30. Figure 1 shows the amplitude characteristics of the counters, type MS-9 and the relative number of spurious discharges for a constant supply voltage which was 100 V higher than the Geiger threshold. Curve 1 in the figure represents the amplitude characteristic, while Curves 2 show the number of spurious discharges. It was found that the amplitude characteristics of the counters, types GS-9 and GS-30, are very similar to those of Figure 1, provided the test conditions are identical. The efficiency of a counter depends substantially on the delay of the supply pulse with respect to the appearance of the particle. The time during which the counter "remembers" the passage of a particle depends on the number of charges produced in the volume of the counter and the rate of their extraction. This effect

Operation of Gas-discharge Counters at Large Pulsed Overvoltages

is illustrated, for the counter type MS-9, in Figure 2. From this it is seen that the "memory" of the counter is about 5-6 μs. The efficiency as a function of the supply voltage is plotted in Figure 3. From this it is seen that at a fixed delay time (6 μs) the efficiency curve has a minimum. This can be explained as follows. The time determining the "memory" of the counter in the Geiger region consists of two components: the time necessary for the propagation of the charge along the wire and the time during which the positive ions recede from the wire sufficiently far for the probability of the ionisation by ions to be sufficiently small. Figure 4 shows the time characteristics of the counters MS-9 when the particles were passing through the middle of the counter (Curves 1 and 3) and through the end of the counter (Curves 2 and 4). It is seen that the "memory" times for the two cases are different. This permits evaluation of the velocity of the propagation of the discharge in the counter. It is found that the velocity is 2 cm/μs. The time characteristics for the counters type GS-30 are shown in Figure 5. From this,

Operation of Gas-discharge Counters at Large Pulsed Overvoltages

it is seen that the "memory" time for the counters is 3-4 μs. The time characteristics of the GS-9 counters are similar to those of Figure 5. The counters type MS-9 were also investigated at low DC voltages. The meaning of the term "low" signifies that the counters operated in the absence of gas-type amplification. The time characteristics for the counter taken with the pulse voltage of 1.9 kV are given in Figure 6. The authors make acknowledgment to A.A. Tyapkin and V.V. Vishnyakov for valuable advice.
There are 6 figures and 2 Soviet references.

SUBMITTED: January 14, 1959

4

Card 4/4

DOLGOSHEYN, B. A., LUCHKOV, B. I., KRISHCHYAN, V. M., MATEVOSYAN, YE. M., SHARKHATUNYAN, R. O., USHAKOV, V. I., ASATIANI, T. L., BETSINSKIY, L. S., Alikhanyan, A. I., Asatiani, T. L.

"Polarization of Cosmic Ray Muons."

report submitted for the Intl. Conf. on Cosmic Rays and Earth Storm (IUPAP) Kyoto, Japan 4-15 Sept. 1962.

S/120/62/000/001/009/061
E032/E514

AUTHORS: Borisov, A.A., Dolgoshein, B.A., Luchkov, B.I., Reshetin, L.V. and Ushakov, V.I.

TITLE: A study of spark-chamber characteristics

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 49-54

TEXT: The authors report the construction and the main characteristics of an experimental argon-filled spark chamber with a working volume of 0.5 litres. The spark chamber consists of four plane-parallel electrodes (150 x 70 x 5 mm^3) separated by cylindrical teflon insulators. Gap lengths of 8, 10, 12 and 30 mm have been used (in the latter case there is only one gap). The chamber is filled with technical argon mixed with a small amount of ethyl alochol to reduce spurious discharges. The chamber is gated by two arrays of Geiger counters, one above and one below the chamber. The coincidence pulse from these two arrays triggers a high-voltage pulse generator based on the hydrogen thyratron ТГИ-1 (TGI-1) 325/16. The pulse produced by the generator has a rise time of about 30 nanosec and a decay constant of 10^{-7} sec; the amplitude is approximately equal to the

Card 1/2

maximum anode voltage on the thyratron. The delay between the passage of the nuclear particle and the application of the high-voltage pulse to the electrodes is about 0.7 μsec, most of which is associated with the operation of the hydrogen thyratron. A clearing field of up to 100 V/cm is applied to the plates. Fig.3 shows the dependence of the efficiency of the chamber on the amplitude of the high-voltage pulse for various gas pressures (zero clearing field, high-voltage pulse delay 0.7 μsec, inter-electrode gap 10 mm). Data are also reported on the dependence of the efficiency on the high-voltage decay time, the amplitude and polarity of the clearing field and the high-voltage delay time. It is reported that particle tracks at angles up to 35° with the normal to the plates can be reliably recorded. There are 6 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: February 16, 1961

S/120/62/000/001/018/061
E140/E463

AUTHORS: Dolgoshein, B.A., Luchkov, B.I., Ushakov, V.I.

TITLE: Pulse hodoscope for muon decay investigations

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 85-89

TEXT: The instrument described here is intended for the study of the polarization of cosmic μ^+ mesons, by recording the particle trajectories in $\mu \rightarrow e$ decay. The method is to determine the ratio of decay positrons emerging from an absorber in the forward and backward hemispheres. Gas counters are used with pulsed overvoltage. This permits defining the times at which neon-triode indicator tubes operate in the cycle of events associated with the decay. The arrangement is best illustrated with reference to Fig.1. Here rows A_1, A_2 and A_3 consist of argon-methylal counters specially produced in the laboratory (diameter 2 cm, length of sensitive volume 60 cm), the remaining rows consisting of standard Soviet geiger counters type СИ-6Г (SI-6G). Row П is the absorber, dimensions 70 x 140 x 2 cm^3. Blocks B and C are intended for positron trajectory measurements, and are as symmetrical as possible. In addition,

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Pulse hodoscope for muon decay ...

they are attached to a mechanism permitting their rapid interchange (every two hours). The dc excitation of the counters in the hodoscopic rows A_1, A_2, A_3 and the B, C blocks was selected to enable an arc discharge to arise after passage of an ionizing particle by application of very short ($\sim$0.1 μs) pulse over-voltages, with an efficiency of $\sim$100%. By terminating the pulse excitation of the hodoscope tubes before applying that of the positron detection blocks B, C, the hodoscope tubes are not permitted to register the passage of positrons occurring during the time that B and C are excited. The pulse excitation of the hodoscope rows is triggered by a muon passage, while the positron blocks are triggered from 0.8 to 5.8 μs later. Rows S_1, S_2, S_3 are control rows, used for detecting the arrest of a muon in the absorber. The relationship between the dc and pulse excitation voltages in B, C, is such that the efficiency for charged particles passing through the counters during the pulse excitation is close to 100%, while very low ($\lesssim 10^{-7}$) for the passage of the muon which triggers the pulse supply. A block diagram and the counter-indicator circuits are given and discussed in some detail.
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S/120/62/000/001/018/061
Pulse hodoscope for muon decay ... E140/E463

An example of the records obtained is given. The photograph (Fig.3) indicates the arrival of a μ^+, its absorption in Fe, and the emission of a positron during the interval 1.7 to 2.2 μs. A time analyser associated with the hodoscopic instrument permits the muon lifetime to be determined, acting as a control on the hodoscope, and permits possible depolarization during the 5 μs after arrest, giving the dependence of polarization on time. A series of control measurements was made to determine the asymmetry of the instrument with respect to the absorber. Iron was used to obtain full depolarization. Using 30 μs delay, or operating without an absorber, the background (false $\mu \longrightarrow e$ decay) was measured and found to be about 5×10^{-3}. The muon lifetime was found to be 2.19 ± 0.04 μs, from measurements on the instrument. There are 3 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: April 18, 1961

Card 3/5

17809

S/120/62/000/002/040/047
E032/E514

AUTHORS: Borisov, A.A., Dolgoshein, B.A. and Luchkov, B.I.

TITLE: A spark counter with a large interelectrode gap

PERIODICAL: Pribory i tekhnika eksperimenta, no.2, 1962, 170

TEXT: The dimensions of the counter are 40 x 30 x 10 cm^3 and the distance between the electrodes is 4.5 and 10 cm. It consists of a rectangular perspex frame and two dural electrodes on either side of the frame. The working gases are argon and neon (purity better than 0.1%), and ethyl alcohol and methylal are used as quenchers. The efficiency of the counter was found to remain at 100% for ten days without re-filling. In view of the simplicity of the counter, large area counters of this type (1-2 m^2) may be feasible and may find application in cosmic-ray experiments. There is 1 figure.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AS USSR)

SUBMITTED: July 11, 1961

Card 1/1

S/048/62/026/006/002/020
B125/B112

AUTHORS: Dolgoshein, B. A., Luchkov, B. I., and Ushakov, V. I.

TITLE: Polarization of cosmic muons of different energies

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 6, 1962, 711 - 712

TEXT: Polarization measurement in the energy range 0.2 - 1.55 Bev is studied. A preliminary report has already been given at the Mezhdunarodnaya konferentsiya po kosmicheskim lucham (International Conference on Cosmic Rays) Moscow, 1959. The degree of polarization was determined from the decay asymmetry when a muon was slowed down in a copper target surrounded by an array of Geiger counters (in rectangular or cylindrical arrangement). The background is practically eliminated by photographic fixing of the muon and positron trajectories for each single $\mu^+ \rightarrow e^+$ -decay. In this way cases can easily be identified. Measurement of the decay positrons with the rectangular experimental arrangement permits an additional control and confirms that the muon is not depolarized after slowing down in the target. The check measurements on an

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Polarization of cosmic muons...

iron target confirm the symmetry of the rectangular experimental arrangement. At sea level, photographic pictures of approximately 40,000 $\mu \rightarrow e$-decay events were taken at muon energies 0.2; 0.3; 0.55; 1.05; 1.4 and 1.55 Bev. From these data the degree of polarization was calculated with the aid of the "Ural" computer. If the muon energy increases from (0.2 ÷ 0.5) to (1.4 ÷ 1.55) Bev, polarization increases (1.5 ± 0.19) times and approximately agrees with the theoretical values of V. Berezinskiy, B. Dolgoshein, Zh. eksperim. i teor. fiz., 42, 949 (1962). There are 1 figure and 1 table. The most important English-language reference is: G. Clark, J. Herail, Phys. Rev., 108, 1938 (1957).

Card 2/2

3.2400
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37048
S/056/62/042/004/004/037
B102/B104

AUTHORS: Dolgoshein, B., Luchkov, B., Ushakov, V.

TITLE: Low-energy cosmic muon polarization at sea level

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 949-955

TEXT: The polarization of cosmic positive muons of 0.2-1.55 Bev was measured at sea level with a copper absorber (700·1400·20 mm^3) surrounded by several layers of gas-discharge counters. The μ^--mesons decayed before recording (lifetime $\sim 10^{-7}$ sec). The background of the μ^+-e^+ decays recorded could be due to rather improbable events (the muon is stopped in the layers and another particle passes through the positron detector; the muon and positron trajectories intersect within the absorber; the muons are stopped or decay in the glass walls of the counters nearest to the absorber plate). The ratio between background and effect was of the order of 10^{-2}-10^{-3}. During 1500 hrs operation more than $3 \cdot 10^4$ μ^+-e^+ events were recorded. From the time distribution of the decay positrons the μ^+

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lifetime was obtained as 2.18 ± 0.04 μsec. The asymmetry of the positron angular distribution was measured, the asymmetry factors R were determined:

Absorber	Cu	Cu	Cu	Fe
E, Bev	0.2	0.55	1.40	0.55
R	1.13 ± 0.025	1.135 ± 0.020	1.195 ± 0.030	1.020 ± 0.023

The polarization of the muon flux was calculated from R, taking account of the geometry, the angular and energy distributions and the range-energy ratio of the decay positrons. The numerical results are given in Table 2; for Fe polarization was, as expected, equal to zero. The possible contribution of $K_{\mu 2}$ decays to the polarization is estimated: $\eta(E_\mu \approx 1.5$ Bev) = 0.375 ± 0.035. From this a value $K^+/\pi^+ = 0.22 \pm 0.18$ is obtained for the ratio of K^+ and π^+ mesons produced in the atmosphere.

Professor A. I. Alikhanyan is thanked for interest and V. Berezinskiy for discussions. There are 5 figures and 2 tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: November 1, 1961

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S/056/62/042/004/004/037
B102/B104

Low-energy cosmic muon polarization ...

E_{μ^+}, Bev	Number of decays	Polarization exp.	Polarization theor.
0,20	6663	0,24±0,045	0,23
0,30	1415	0,29±0,08	0,25
0,55	11066	0,25±0,035	0,28
1,05	1485	0,40±0,08	0,33
1,40	5701	0,35±0,05	0,335
1,55	4900	0,40±0,05	0,335

Table 2

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S/056/62/042/004/026/037
B108/B102

34 6700

AUTHORS: Berezinskiy, V., Dolgoshein, B.

TITLE: The polarization of low-energy cosmic-ray muons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 1084 - 1087

TEXT: The sea-level polarization of 0 - 2 Bev muons produced in pion decay was calculated and compared with experimental data. Muon production throughout the atmosphere was considered. The polarization of an inclined muon beam was found to be greater than that of a vertically incident beam of the same energy, the effective production energy of the former being the greater of the two. This effect, however, was observable only at energies of less than 200 Mev. The results agree with experimental data. There are 2 figures and 15 references: 7 Soviet, and 8 non-Soviet. The four most recent English-language references read as follows: G. Clark, J. Hersil. Phys. Rev., 108, 1538, 1957; S. Hayakawa. Phys. Rev., 108, 1533, 1957; S. Johnson. A dissertation for the degree of Doctor of Philosophy,

Card 1/2

Saint Louis, 1959; S. Olbert. Phys. Rev., 96, 1400, 1954.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: November 1, 1961

Card 2/2

S/120/62/000/005/031/036
E194/E535

AUTHORS: Babalov, M.A., Dolgoshein, B.A., Luchkov, B.I. and Sosnin, F.R.

TITLE: A study of the sensitivity of photographic emulsion in high electric fields

PERIODICAL: Pribory i tekhnika eksperimenta, no.5, 1962, 178-179

TEXT: Attempts were made to repeat the result of Rothstein (Photogr. Sci. Engng, 1959, 3, 255; 1960, 4,5) who observed a great increase in the sensitivity of photographic emulsions in electric fields of 1 - 2 MV/cm. The effect was not observed either in tests with a standard photographic emulsion (25 μ thick) with a speed of 100 GOST units illuminated by light pulses of 30 μsec applying simultaneously electric stresses up to 800 kV/cm, or in further tests with high speed (1400 GOST units) aerial photography film 30 μ thick on a base 120 μ thick made under a pressure of 25 atm (to reduce the possibility of breakdown) to which impulses of 110 kV were applied. The expected effect may have been absent due to the very short electron free path in the emulsions used, which were chemically sensitized. There was a small but rather

Card 1/2

A study of the sensitivity of ... S/120/62/000/005/031/036
E194/E535

irreproducible reduction in sensitivity at stresses of 30-40 kV/150 μ. There is 1 figure.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute AS USSR)

SUBMITTED: October 10, 1961

Card 2/2

S/823/62/000/000/004/007
B125/B102

AUTHORS: Dolgoshein, B. A., Luchkov, B. I., Ushakov, V. I.

TITLE: Study of the polarization of positive muons in cosmic rays

SOURCE: Nekotoryye voprosy fiziki elementarnykh chastits i atomnogo yadra. Ed. by V. D. Mikhaylov and I. L. Rozental'. Mosk. inzh.-fiz. inst. Moscow, Gosatomizdat, 1962, 83-90

TEXT: The polarization of a current of high-energy muons was studied with a view to elucidating how they are produced in the upper atmosphere. Their degree of polarization is most conveniently determined by measuring the angular distribution of decay positrons from a muon stopped inside a cylindrical target. The experimental arrangement is shown in Fig. 1. 7798 $\mu \rightarrow e^+$ decays were recorded within 5200 hrs at muon energies of 0.3, 1.05, and 1.55 Bev, and for each case the positron angular distributions were measured. Using the method of least squares, the quantity $b\eta$ in the equation $f(\theta) \sim 1 - b\eta \cos\theta$ (θ = projection of the angle between positron direction and muon direction onto the perpendicular plane) is calculated from these angular distributions. The factor b depends on the parameters of

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Study of the polarization of...

the experimental arrangement and on the characteristics of the $\mu^+ \rightarrow e^+$ decay (positron spectrum, range-to-energy ratio of the positrons). At the instant of muon production, their polarization is given by $\eta^* = \eta/K_{atm}K_{stop}$, where η is the degree of polarization, and $K_{atm} \sim 0.95$ is the coefficient of depolarization in the atmosphere; the coefficient K_{stop} allows for the possible depolarization of the muon after stopping. Accelerator experiments indicated that $K_{stop} = 1$. For 0.3 Bev, $\eta^* = 0.30 \pm 0.06$ and $\eta' = 0.24$; for 1.05 Bev, $\eta^* = 0.40 \pm 0.08$ and $\eta' = 0.33$; for 1.55 Bev, $\eta^* = 0.40 \pm 0.05$ and $\eta' = 0.335$. η' is the degree of polarization to be expected from data of V. Berezinskiy and B. A. Dolgoshein (Zh. eksperim. i teor. fiz. 71, 42, 1084 (1962)). The difference between η^* and η' is obviously due to the effect of $K \rightarrow \mu$ decay on the production of muons at increasing energy. The resulting degree of polarization may be considerably affected even by very small amounts of muons produced in $K \rightarrow \mu$ events. The great significance of measuring the polarization of cosmic-ray muons at even higher energies is stressed. There are 4 figures and 1 table.

Card 2/3

BORISOV, A.A.; DOLGOSHEIN, B.A.; LUCHKOV, B.I.

Spark counter with a large interelectrode interval. Prib. i tekh. eksp. 7 no.2:170 Mr-Ap '62. (MIRA 15:5)

1. Fizicheskiy institut AN SSSR.
(Nuclear counters)

DOLGOSHEIN, B. A.

95

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fivevskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryasanov, theory of ionization losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

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S/089/62/013/006/019/027
B102/B186

Nauchnaya konferentsiya...

Ye. Ye. Lovetskiy, A. A. Rukhadze, electromagnetic waves in nonhomogeneous plasma; Yu. D. Kotov, I. L. Rozental', the origin of fast cosmic muons; Yu. M. Ivanov, muon depolarization in solids; V. G. Varlamov, Yu. M. Grashin, B. A. Dolgoshein, V. G. Kirillov-Ugryumov, V. S. Roganov, A. V. Samoylov, μ^- capture by various nuclei; V. S. Demidov, V. G. Kirillov-Ugryumov, A. K. Ponosov, V. P. Protasov, F. M. Sergeyev, scattering of π^- mesons at 5 - 15 Mev in a propane bubble chamber; S. Ya. Nikitin, M. S. Aynutdinov, Ya. M. Selektor, S. M. Zombkovskiy, A. F. Grashin, muon production in π^-p interactions; B. A. Dolgoshein, spark chambers; N. G. Volkov, V. K. Lyapidevskiy, I. M. Obodovskiy, study of operation of a convection chamber; K. G. Finogenov, production of square voltage pulses of high amplitudes; G. N. Alekseakov, problems of color vision; V. K. Lyapidevskiy, relation between number of receivers and number of independent colors; Ye. M. Kudryavtsev, N. N. Sobolev, N. I. Tisengausen, L. N. Tunitskiy, F. S. Faysulov, determination of the moment of electron transition of oscillator forces and the widths of the Schuhman-Runge bands of molecular oxygen; B. Ye. Gavrilov, A. V. Zharikov, V. I. Rayko, decomposition of the volume charge of intense ion beams; Ye. A. Kramer-Ageyev, V. S. Troshin, measurement of neutron spectra; G. G. Doroshenko, new methods of fast-neutron recording; V. I. Ivanov, dosimetry terminology; N. M. Voronkov,

Card 2/4

DOLGOSHEIN, B.A.; LUCHKOV, B.I.; USHAKOV, V.I.

Polarization of cosmic muons at different energy levels. Izv. AN SSSR. Ser. fiz. 26 no.6:711-712 Je '62. (MIRA 15:6)
(Mesons) (Cosmic rays)

DOLGOSHEIN, B.; LUCHKOV, B.; USHAKOV, V.

Polarization of low energy cosmic ray muons at sea level. Zhur.-eksp.i teor.fiz. 42 no.4:949-955 Ap '62. (MIRA 15:11)

1. Moskovskiy inzhenerno-fizicheskiy institut.
(Mesons) (Cosmic rays)

BEREZINSKIY, V.; DOLGOSHEIN, B.

Calculation of the polarization of low energy cosmic ray muons.
Zhur.eksp.i teor.fiz. 42 no.4:1084-1087 Ap '62. (MIRA 15:11)

1. Moskovskiy inzhenerno-fizicheskiy institut.
(Mesons) (Cosmic rays)

DOLGOSHEIN, B. A.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Physics Institute imeni P. N. Lebedev in 1962:

"Polarization of Cosmic Low Energy mu-mesons at Sea Level."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

ACCESSION NR: AP3002719 S/0120/63/000/003/0055/0057

AUTHOR: Bobrov, V. D.; Varlamov, V. G.; Grashin, Yu. M.; Dolgoshein, B. A.; Krillov-Ugryumov, V. G.; Roganov, V. S.; Samoylov, A. V.

TITLE: Use of threshold Cerenkov counter for separation of μ- and π-mesons in meson beams

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1963, 55-57

TOPIC TAGS: μ-meson separation, threshold Cerenkov counter

ABSTRACT: A Cerenkov counter has been used for the separation of μ- and π-mesons. The counter consists of a 100-mm cube of polished organic glass 2 mm thick filled with distilled water containing 2-aminonaphthalene-6, 8-disulfonic acid, which serves as the spectrum transformer. This cube is placed inside another cube with walls 4 mm thick. The space of 3 mm between the cubes is filled with MgO powder. Two FEU-33 photomultipliers connected to a common load are in optical contact with the water radiator. The radiator

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ACCESSION NR: AP3002719

and the photomultiplier are enclosed in a steel casing with foil windows for particle passage. A block diagram of the arrangement is shown in Fig. 1 of the Enclosure. A 260-Mev/sec pulsed meson beam was used in experiment. Resolution time of the coincidence circuits is 5—6 nanosec, and the efficiency of anticoincidence, 99.93%. It was found that the use of the Cerenkov counter makes it possible to reduce the contents of π-mesons in a μ-meson beam by a factor of 10. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 25Jun62 DATE ACQ: 12Jul63 ENCL: 01

SUB CODE: 00 NO REF SOV: 002 OTHER: 001

Card 2/3

ACCESSION NR: AP3002719

ENCLOSURE: 01

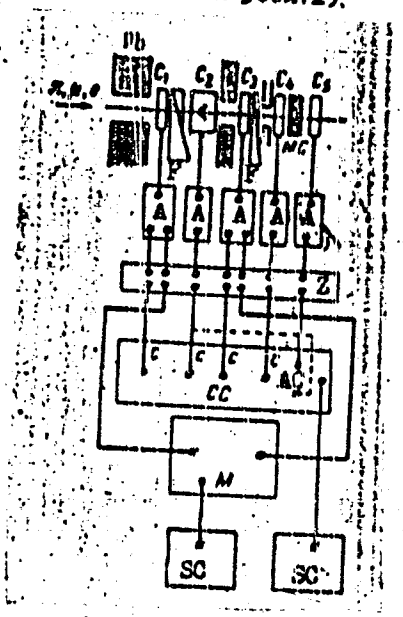

Fig. 1. Location of counters and block diagram of electronic circuit

Pb - 70 x 70 mm lead collimator; C_1 and C_3 - scintillation counters with Φ 100 x 10 mm plastic scintillators; C_4 - Φ 80 x 3 mm; C_5 - Φ 200 x 10 mm; C_2 - Cerenkov counter; F_1 and F_2 - variable thickness filters; Mc - 3 gr/cm² carbon target; A_1 through A_5 - amplifiers with gain of 5; 3 - variable delay lines; CC - coincidence and anticoincidence circuits; C - coincidence inputs; AC - anticoincidence inputs; M - coincidence monitoring circuit; SC - scaler circuit.

Card 3/3

L 14984-63 EWT(d)/BDS ASD/ESD-3/APGC Pg-4/Pk-4/Po-4/Pq-4
IJP(C)

ACCESSION NR: AP3004891 S/0120/63/000/004/0063/0066

AUTHOR: Verlemov, V. G.; Grushin, Yu. N.; Dolgoshein, B. A.; Samoylov, A. V.

TITLE: Multichannel coincidence-anticoincidence circuit

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1963, 63-66

TOPIC TAGS: multichannel coincidence-anticoincidence circuit, coincidence-anticoincidence circuit, scintillation counter, particle recording efficiency, coincidence-circuit dead time, coincidence-pulse rise time

ABSTRACT: The coincidence-anticoincidence circuit shown in Fig. 1 of Enclosure has four coincidence and two anticoincidence channels. The coincidence circuits are switched on by corresponding tumblers. The input pulses are negative with an amplitude of 2 v or higher. The plate current of each coincidence tube (L_1 to L_4) is 20 μamp. The current flowing along the separating diode D_3 is 15 μamp. The voltage of D_3 is 0.5 v with one open tube and 0.7 v with four open tubes; consequently, with incomplete coincidence the maximum pulse amplitude for D_3 is 0.2 v. The coincidence pulses separated at D_3 are amplified by the wide-band stage of tube L_5. Diode D_5 discriminates the incomplete coincidences, which then have an amplitude of 1 v or higher. Discrimination reduces the current of L_6 by

Card 1/2

L 14984-63
ACCESSION NR: AP3004891

approximately 70 to 80%. Four scintillation counters whose scintillators were 100 mm in diameter and 10 mm thick were used to test the circuit. FEU-3 photomultipliers were in optical contact with the counters, the signals of each of which were shaped and amplified by a wide-band two-stage amplifier. Experimental results show that the following: 1) at a time resolution of 5 to 8 nanosec, the efficiency of particle recording in four-cycle coincidences is not lower than 99%; 2) the efficiency of particle anticoincidence recording is 99.95 +0.01%; 3) coincidence circuit dead time is about 30 nanosec; and 4) output-pulse rise time of the coincidence circuit is less than 10 nanosec. Orig. art. has: 5 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00 DATE ACQ: 23Aug63 ENCL: 01

SUB CODE: GE, SD NO REF SOV: 000 OTHER: 001

Card 2/2

L 13747-65 EWT(m)/EPA(sp)-2/EWA(m)-2 Pab AEDC(a)/SSD
ACCESSION NR: AP4047459 S/0120/64/000/005/0060/0064

AUTHOR: Dolgoshein, B. A.; Luchkov, B. I.; Moiseyev, G. G.

TITLE: Recording of particles in a long-gap spark discharge chamber

SOURCE: Pribory* i tekhnika eksperimenta, no. 5, 1964, 60-64

TOPIC TAGS: spark discharge chamber

ABSTRACT: The accuracy of spark tracking of cosmic-particle trajectories was investigated in a large spark-discharge chamber with a single 10-cm-long inter-electrode gap; the angle between the particle path and the electric field lay within 0—60°. The experimental outfit consisted of the spark chamber, an exhaust plant, a control unit, and an impulse h-v supply unit; the highest exponential-shape impulse was 1.26 kv. Three gases, A, Ne, and He, were tested: A — within 100—500 torr, Ne at 1 atm; no effect of the pressure on the track shape was observed within 300--760 torr with any gas. Within 0—40°, the sparks almost

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L 13747-65
ACCESSION NR: AP4047459

always correctly followed the particle path; within 40—50°, in 50% of the cases, the principal spark was accompanied by "thin" sparks; in other cases, only thin sparks were observed. The same spark discharge chamber in a projection regime, was used for measuring the false curvature of tracks. "The authors wish to thank A. I. Alikhanyan for his interest in the work." Orig. art. has: 9 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Institute of Physics, AN SSSR)

SUBMITTED: 30Oct63 ENCL: 00

SUB CODE: NP NO REF SOV: 008 OTHER: 003

Card 2/2

ACCESSION NR: AP4012569 S/0056/64/046/001/0392/0395

AUTHORS: Dolgoshein, B. A.; Luchkov, B. I.

TITLE: New gas discharge tracking detector -- streamer chamber

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 392-395

TOPIC TAGS: gas discharge detector, gas discharge particle detector, particle detector, spark chamber, streamer chamber, incomplete spark discharge, electron avalanche, cosmic ray tracking, chamber dead time, ionization density measurement, spark discharge

ABSTRACT: The essential feature of the new chamber is the use of an incomplete spark discharge. The point of passage of the particle is indicated not by a spark but by a streamer, or more exactly by the initial portions of all the streamers which form the electron avalanches along the particle path. The gas discharge is stopped artificially at the stage when the avalanches grow into streamers and the

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ACCESSION NR: AP4012569

latter begin to travel to the electrodes at $\sim 10^8$ cm/sec. Radiation of the gas in the streamer plasma makes the track visible. The construction and supply circuits are described, and photographs of cosmic-ray tracks obtained with the chamber are presented. The dead time of the streamer chamber should be much shorter than that of the spark chamber, because of the lower charge density in the plasma of the former. The streamer chamber is also more effective in measurements of particle ionization density and in the study of initial stages of a spark discharge. "The authors thank Prof. A. I. Alikhanyan for his continuous interest in the work, V. V. Dmitrenko and V. V. Chizhov of the MIFI Problems Laboratory, and L. V. Sukhov of FIAN for help." Orig. art. has: 2 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 04Nov63 DATE ACQ: 26Feb64 ENCL: 01

SUB CODE: PH, SD NO REF SOV: 006 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410820002-4"

ACCESSION NR: AP4042551 S/0056/64/046/006/1953/1959

AUTHORS: Dolgoshein, B. A.; Luchkov, B. I.; Rodionov, B. U.

TITLE: Streamer chamber

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 1953-1959

TOPIC TAGS: particle counter, particle detector, spark discharge chamber, charged particle trajectory, cosmic ray measurement

ABSTRACT: The authors describe in detail the construction and mechanism of operation of a new type of gas discharge track chamber, the development of which was stimulated by the unsatisfactory operation of the commonly used multilayer spark or discharge chamber. The new streamer chamber possesses all the advantages of a spark chamber (rapid action, simplicity of construction and of auxiliary high-voltage techniques, possibility of constructing chambers of large dimensions, etc.) and at the same time records with good resolution the

spatial picture of any event occurring in the chamber volume, and presents a picture of the charged particles in the chamber irrespective of their direction of motion. A detailed description of the chamber design and the auxiliary equipment is given elsewhere (PTE, in press). The mechanism of formation of the particle tracks is discussed and results of experimental investigations of various characteristics of the chamber are presented. The effect of different gas media and gas pressures was also studied. The results show that the brightness and structure of the track depend on the direction of particle trajectory relative to the electric field in the chamber. Furthermore, particle tracks in the chamber are not very bright and are rather wide in the electric-field direction, which impairs the spatial resolution. The advantages of the streamer chamber over the spark chamber are evident in such important parameters as dead time and the possibility of measuring the ionizing ability of the particles. The streamer chamber can also be very useful for the study of processes related to the physics of gas discharge such as streamer velocity, electron shower

ACCESSION NR: AP4042551

path length, fluctuations in showers, and other discharge characteristics, since the primary electrons that initiate the discharge are accurately localized in the region between electrodes. "The authors thank Professor A. I. Alikhanyan for his interest in the work, Yu. Grashin, S. Somov, V. Chuvilo, and V. Dmitrenko of MIFI, and L. V. Sukhov of FIAN for great help in the work, and also V. Ry*kalin of LYaP OIYaI for supplying the photographic film. Orig. art. has: 6 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

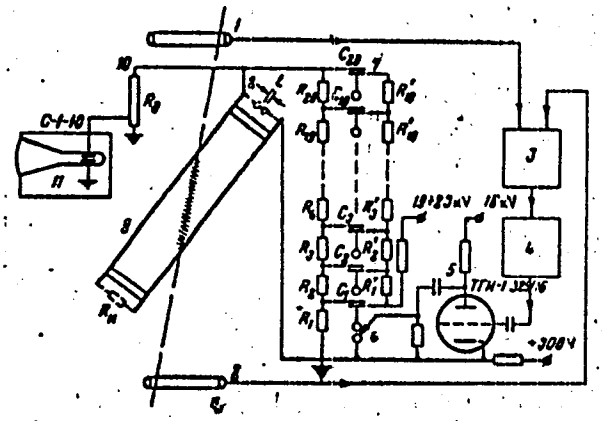
SUBMITTED: 10Dec63 DATE ACQ: ENCL: 01

SUB CODE: NP NR REF SOV: 009 OTHER: 007

Card 3/4

ACCESSION NR: AP4042551

ENCLOSURE: 01



Block diagram of experimental setup:
1, 2 - rows of GM counters
3 - coincidence circuit
4 - amplifier and discriminator
5 - generator
6 - first firing gap of pulse generator
7 - pulse generator
8 - shunting discharge gap
9 - chamber
10 - high-voltage divider
11 - oscilloscope

Card 4/4

DOLGOSHEIN, B.A.; LUCHKOV, B.I.; RODIONOV, B.N.

Streamer chamber. Zhur.eksp.i teor.fiz. 46 no.[illegible]1053-1059 Ja '64.

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.
(MIRA [illegible])

DOLGOSHEIN, B.A.; LUCHKOV, B.I.; MOISEYEV, G.G.

Particle recording in a spark chamber with a wide inter-electrode gap. Prib. i tekh. eksp. 9 no.5:60-64 S-O '64. (MIRA 17:12)

1. Fizicheskiy institut AN SSSR.

L 52965-65 EWT(m)/T/EWA(m)-2

ACCESSION NR: AP5010519 UR/0056/65/048/004/1197/1199

AUTHOR: Bobrov, V. D.; Varlamov, V. G.; Grashin, Yu. M.; Dolgoshein, B. A.; Kirillov-Ugryumov, V. G.; Roganov, V. S.; Samoylov, A. V.; Semov, S. Yu.

TITLE: Capture of negative muons by atoms in a chemical compound

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 4, 1965, 1197-1199

TOPIC TAGS: muon, muon capture, effective affinity, mesic atom

ABSTRACT: The authors measured the relative probabilities of captured negative muons by atoms in several chemical compounds, with an aim at extracting information necessary for the interpretation of other experiments with muons. The results show that for the compounds investigated (LiCl, CuCl, ZnO, ZnS, and AlCu) the Fermi-Teller Z-law does not describe the experiment satisfactorily. An analysis of the available data shows that compared with the prediction of the Z-law mesic atoms of the elements which have relatively large electron-affinity energy are formed with some preference. The results show that in most cases the tendency to preferred formation of the mesic atoms of the element with the larger electron affinity

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L 52965-65

ACCESSION NR: AP5010519

is violated only in five of 31 cases. Four out of the five violations are in compounds of carbon, and this is apparently connected with very complicated spatial configuration of these molecules. The measurement procedure and a detailed discussion of the results will be published later. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: 26Dec64 ENCL: 00 SUB CODE: NP

NR REF SOV: 001 OTHER: 003

Card 2/2

L 52966-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5010520 UR/0056/65/048/004/1199/1199

AUTHOR: Bobrov, V. D.; Varlamov, V. G.; Grashin, Yu. M.; Dolgoshein, B. A.; Kirillov-Ugryumov, V. G.; Rogalev, V. B.; Smolov, A. V.; Sosnin, S. V.

TITLE: Capture of negative muons by pure chromium and nickel isotopes

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 4, 1965, 1199-1199

TOPIC TAGS: muon, chromium, nickel, muon capture, proton subshell, neutron subshell, muon lifetime, capture rate

ABSTRACT: The authors point out that data on muon capture by nuclei can be used as a tool for the study of the structure of the nucleus, and have therefore investigated muon capture by nuclei with closed neutron or proton subshells, in the form of isotopes of Cr with mass numbers 50, 52, 53, and 54 (Cr^{52} has a closed neutron subshell) and Ni isotopes with mass numbers 58, 60, and 62 (which have a closed proton subshell). The isotope enrichment runs from 78.5 to 99.9%. The muon beam from the OIYaI (Joint Institute of Nuclear Research) synchrocyclotron was used for the experiments. The total muon capture probability was determined by measuring

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L 52966-65

ACCESSION NR: AP5010520

the lifetimes of the muons on the K orbit of the corresponding atom. The experimental results by processing the corresponding time distributions with a computer are:

Nucleus:	Cr^{50}	Cr^{52}	Cr^{53}	Cr^{54}	Ni^{58}	Ni^{60}	Ni^{64}
Capture rate 10^5 sec	38,25±±0,50	34,52±±0,47	32,07±±0,45	30,57±±0,42	61,10±±1,05	55,62±±0,07	47,16±±0,95

A detailed discussion of the results and of the measurement procedure will be published later. Orig. art. has: 1 table.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: 26Dec64 ENCL: 00 SUB CODE: NP

NR REF SOV: 000 OTHER: 000

Gord 2/2

DOLGOSHEV, M.S.; BURENKOV, G.K.; YUDIN, I.P., shofer

Suggestions from various places on the improvement of the Komarov disinfection unit. Veterinariia 38 no.6:81-82 Je '61. (MIRA 16:6)

1. Zaveduyushchiy Kingiseppskoy mezhrayonnoy veterinarno-bakteriologicheskoy laboratoriyey, Estonskaya SSR (for Dolgoshev). 2. Glavnyy veterinarnyy vrach Kandalakshskogo rayona, Murmanskoy oblasti (for Burenkov). 3. Valuyskaya mezhrayonnaya veterinarno-bakteriologicheskaya laboratoriya, Belgorodskoy oblasti (for Yudin).
(Disinfection and disinfectants) (Veterinary hygiene)

GOVORUKHIN, A.P.; SMELAYA, T.V.; PSHENICHNAYA, A.M.; DOLGOSHEV, V.I., nauchnyy sotrudnik; ZAYTSEVA, M.B.; NEDOSHIVINA, T.G., red.; VLADIMIROV, O.G., tekhn.red.

[Agroclimatic manual for Bryansk Province] Agroklimaticheskii spravochnik po Brianskoi oblasti. Leningrad, Gidrometeor.izd-vo, 1960. 111 p. (MIRA 14:4)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. Upravleniye gidrometeorologicheskoy sluzhby TSentral'no-chernozemnykh oblastey. 2. Institut geografii AN SSSR (for Dolgoshev).
(Bryansk Province--Crops and climate)

1. DOLGOSHOV, V.

2. USSR 600

4. Plants - Reproduction

7. Ripening and fall of fruit and seeds from trees and bushes, Les. khoz, 5, No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

DOLGOSHEV, V. I.

USSR/Agriculture - Orchards

Card 1/1 : Pub. 86 - 17/34

Authors : Dolgoshev, V. I.

Title : Second fruit bearing of plants

Periodical : Priroda 1, 101-102, Jan 1954

Abstract : The phenomenon of second fruit bearing in one year, observed among various berry plants, is explained. One USSR reference (1948).

Institution : Academy of Sciences USSR, Institute of Geography

Submitted : .....

DOLGOSHOV, V.I.

Geographic variability in the seasonal development of trees and shrubs. Bot.zhur.41 no.11:1638-1641 N '56. (MLRA 10:1)

1. Institut geografii Akademii nauk SSSR, Moskva.
(Phenology) (Trees) (Shrubs)

DOLGOSHOV, V.I.

Characteristics of January. Priroda 45 no.1:127-128 Ja '56.
(MLRA 9:4)

1.Institut geografii Akademii nauk SSSR.
(Russia--Climate)

DOLGOSHOV, V.I. (Moskva)

Advance of the spring. Priroda 45 no.4:125 Ap '56. (MLRA 9:7)

1. Institut geografii Akademii nauk SSSR.
(Spring)

DOLGOSHOV, V.I. (Moskva)

Contrasts in May. Priroda 45 no.5:123 My '56. (MLRA 9:8)

1. Institut geografii Akademii nauk SSSR.
(Spring)

DOLGOSHOV, V.I.

Berry season. Priroda 45 no.7:125 Jl '56. (MIRA 9:9)

1.Institut geografii Akademii nauk SSSR, Moskva.
(Berries)

DOLGOSHOV, V.I.

August. Priroda 45 no.8:124 Ag '56. (MLRA 9:9)

1.Institut geografii Akademii nauk SSSR, Moskva.
(Russia--Climate)

DOLGOSHOV, V.I.

Autumn front. Priroda 45 no.10:127 O '56. (MLRA 9:11)

1. Institut geografii Akademii nauk SSSR, Moskva.
(Autumn)

DOLGOSHOV, V.I.

December. Priroda 45 no.12:126 D '56. (MLRA 10:2)

1. Institut geografii Akademii nauk SSSR (Moskva).
(Winter)

USSR/Forestry - Dendrology. K-3

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39083

Author : Dolgoshov, V.
Inst : -
Title : Some Peculiarities of Flowering of the Fine Leaf Linden Tree.

Orig Pub : pchelovodstvo, 1957, No 7, 48-49.

Abstract : The fine leaf linden tree is the latest local flowering tree species of the Russian plain.
Data concerning the time when it flowers in the Leningrad and Moscow environs and in the Kiev oblast are given (table added).
The duration of the flowering is also indicated.

Card 1/1

USSR / Meadow Cultivation. L

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24761

Author : Dolgoshov, V. I.
Inst : Not given
Title : Time in Hay Harvesting

Orig Pub : Geogr. sb., 9, 1957, 79-82

Abstract : Concerning phenological indices of the time in hay harvesting. Bibliography of 13 titles.

Card 1/1

DOLGOSHOV, V.I.,

Coming of early spring birds to the Moscow area. Priroda 46 no.3:125 Mr '57. (MLRA 10:3)

1. Institut geografii Akademii nauk SSSR (Moskva)
(Moscow Province--Birds)

DOLGOVICH, V.I. (Perm')

The ripening of the cherry. Priroda 46 no.7:125-12[illegible] '57.

(Cherry)

DOLGOSHOV, V.I.

The bearing of the hazelnut. Priroda 46 no.8:126 Ag '57. (MLRA 10:9)

1. Institut geografii Akademii nauk SSSR, Moskva.
(Hazel)

DOLGOSHOV, V.I.

AUTHOR: Dolgoshov, V.I.

TITLE: The Leaves Have Stopped Falling (Konets listopada)

PERIODICAL: Priroda, 1957, No 10, p 124 (USSR)

ABSTRACT: The unfolding of buds and foliation of trees and bushes in the Russian plain usually starts in the south-west and then moves to the north-east. This is due to the rising of temperature in that direction. In autumn the fall of the leaves occurs in reverse order, because of the early and abrupt cooling in autumn, resulting in a shorter vegetation period of forest trees. The author mentions for example the birch. It usually loses its leaves in the Central Ural by October 8 (Sverdlovsk) while in Pskov, thanks to the influence of the maritime climate of the Baltic, the birch sheds its leaves by October 20. In continental regions the fall of the leaves is completed earlier and at lower temperatures than in the west. In the south-eastern regions of the Russian plain trees and bushes lose their leaves earlier than in the central parts in spite of a warm autumn. This is caused by frequent droughts, drying winds, and a general decrease of moisture.

Card 1/2

DOLGOSHOV, V.I.

AUTHOR: Dolgoshov, V.I. 26-10-40/44

TITLE: The Leaves Have Stopped Falling (Konets listopada)

PERIODICAL: Priroda, 1957, No 10, p 124 (USSR)

ABSTRACT: The unfolding of buds and foliation of trees and bushes in the Russian plain usually starts in the south-west and then moves to the north-east. This is due to the rising of temperature in that direction. In autumn the fall of the leaves occurs in reverse order, because of the early and abrupt cooling in autumn, resulting in a shorter vegetation period of forest trees. The author mentions for example the birch. It usually loses its leaves in the Central Ural by October 8 (Sverdlovsk) while in Pskov, thanks to the influence of the maritime climate of the Baltic, the birch sheds its leaves by October 20. In continental regions the fall of the leaves is completed earlier and at lower temperatures than in the west. In the south-eastern regions of the Russian plain trees and bushes lose their leaves earlier than in the central parts in spite of a warm autumn. This is caused by frequent droughts, drying winds, and a general decrease of moisture.

Card 1/2

The Leaves Have Stopped Falling 26-10-40/44

ASSOCIATION: Institute of Geography of the AN USSR (Moscow) (Institut geografii, AN SSSR (Moskva))

AVAILABLE: Library of Congress

Card 2/2

Dolgoshov V I

AUTHOR: Dolgoshov, V.I. 26-12-45/49

TITLE: December in the Environs of Moskva (Dekabr' v podmoskov'ye)

PERIODICAL: Priroda, 1957, # 12, p 126 (USSR)

ABSTRACT: December is always a winter month in the environs of Moskva. In the warmest years the average temperature in December was -1.4° C and for many years -8° C. In 1932 the temperature in December was exceptionally warm. The snow melted and several rivers lost their ice covers. On December 22, 1911, a thunderstorm was recorded, the only one in 70 years of meteorological observation. In 20 % of cases December has been colder than January, which usually is the roughest month of the year around Moskva. Temperatures of -30° C and -31° C are not unusual in December, as for example in 1941 and 1942.

ASSOCIATION: Institute of Geography of the AN, USSR (Moskva)
(Institut geografii Akademii nauk SSSR, Moskva)

AVAILABLE: Library of Congress

Card 1/1

Dol Goshov V.I.

DOLGOSHOV, V.I.

Studies on the seasonal development of trees and shrubs in the Moscow region as compared with other regions. Trudy Inst. geog. no.71:83-87 '57. (MIRA 10:9)
(Moscow Province--Trees)

AUTHOR: Dolgoshov, V.I.

SOV-26-58-9-38/42

TITLE: In September (V Sentyabre)

PERIODICAL: Priroda, 1958, Nr 9, p 124 (USSR)

ABSTRACT: The author gives historical facts about the weather during September in several zones of the USSR.

ASSOCIATION: Institut geografii Akademii nauk SSSR /Moskva (The Geographical Institute AS USSR /Moscow).

1. Meteorology--USSR

Card 1/1

AUTHOR: Dolgoshov, V.I.

TITLE: The Month of the Falling Leaves (Mesyats listopada) SOV-26-58-10-47/51

PERIODICAL: Priroda, 1958, Nr 10, p 126 (USSR)

ABSTRACT: The natural and vegetational phenomena which can be observed in the USSR during October (the "Fall" Month) are described.

ASSOCIATION: Institut geografii AN SSSR, Moskva (Institute of Geography, AS USSR, Moscow)

1. Trees—Physiology

Card 1/1

AUTHOR: Dolgoshov, V.I.

SOV-26-58-3-49/51

TITLE: ~~Dates of Arrival of Wild Ducks~~ in the South of the USSR (Sroki prileta kryakovykh utok na yuge SSSR)

PERIODICAL: Priroda, 1958, Nr 3, p 126 (USSR)

ABSTRACT: Field larks and starlings usually arrive before the wild ducks in the most parts of the USSR. However, in the south this situation is reversed. Observations were made by D.N. Kaygorodov in Astrakhan' on the Volga river, A.K. Blak in Kazalinsk on the Syr-Dar'ya, and A.P. Danilovich in Kiyev on the Dnepr river. The phenomen is explained by the fact that the field larks and starlings fly in broad formations, while the wild duck follows the course of rivers. There is 1 table.

ASSOCIATION: Institut geografii Akademii nauk SSSR-Moskva (Institute of Geography of the AS USSR-Moscow)

1. Bird flight--USSR 2. Bird navigation--USSR 3. Birds--Climatic factors

Card 1/1

DOLGOSHOV, V.I.

AUTHOR: None Given

TITLE: Nature's Calendar (Kalendar' prirody) 26-58-4-44/45

PERIODICAL: Priroda, 1958, Nr 4, pp 123 - 126 (USSR)

ABSTRACT: 1) In the article "The Month of the Decisive Approach of Spring" (Mesyats reshitel'nogo nastupleniya vesny), K.V. Kuvshinova, Candidate of Physico-Mathematical Sciences of the Institut geografii Akademii nauk SSSR (Moskva) (Institute of Geography of the USSR Academy of Sciences - Moscow) points out that April is the month when spring begins in all parts of the USSR with more or less intensity. 2) The First Blossoming Trees" (Drevesnyye pervotsvety) by V.I. Dolgoshov of the Institut geografii Akademii nauk SSSR (Moskva) (Institute of Geography of the USSR Academy of Sciences (Moscow) is an article dealing with the nut tree and the alder tree which show the earliest blossoms in spring. 3) "April in Tartary" (Aprel' v Tatarii) by N.V. Napalkov deals with the beginning of spring in the Tatar ASR. 4) "In the South of the Taiga Zone" (Na yuge Tayezhnoy zony) by L.A. Nevskiy of Nerekhta, Kostromskaya Oblast' the author decribes the development of spring in the Nerekhta district in April. 5) "Spring in the

Card 1/2

Nature's Calendar

Kara-Kums" (Vesna v Kara-Kumakh) is written by Professor N.T. Nechayeva, Member-Correspondent of the Turkmen SSR Academy of Sciences (Ashkhabad) in which the characteristics of springtime in Kara-Kum are described. 6) "The First Pollinating Insects" (Pervyye nasekomyye opyliteli) is an article by D.V. Panfilov, Candidate of Biological Sciences of the Institut geografii Akademii nauk SSSR (Moskva) (Institute of Geography of the USSR Academy of Sciences (Moscow) dealing with wild bees and bumble bees, the first polinating insects in early spring near Moscow.

AVAILABLE: Library of Congress

Card 2/2 1. Spring-USSR

AUTHOR: Dolgoshov, V.I.

TITLE: The Beginning of Summer (Nachalo leta) 26-58-6-50/56

PERIODICAL: Priroda, 1958, Nr 6, p 124 (USSR)

ABSTRACT: The author discusses the beginning of summer in different parts of the Soviet Union. He finds that April is the earliest summer month in the Black Sea area and around Ashkhabad. Moscow considers June a normal summer month, while in the extreme north and in the Siberian tundras summer does not begin until July.

ASSOCIATION: Institut geografii Akademii nauk SSSR (Moskva)
(Institute of Geography of the USSR Academy of Sciences, Moscow)

Card 1/1 1. Seasons-USSR

DOLGOSHOV V.I.

AUTHOR: Popov, G.K., Professor (Kraskovo, Moscow Oblast')

TITLE: Cherries in the Amateur Garden (Vishnya v lyubitel'skom sadu)

26-58-6-55/56

PERIODICAL: Priroda, 1958, Nr 6, p 127 (USSR)

ABSTRACT: The author refers to the article on the "Ripening of Cherries" by V.I. Dolgoshov, published in "Priroda" Nr 7, 1957, in which nothing had been said about ripening period of different cherry varieties. He points out that by selecting cherries with different ripening dates the amateur gardener can gather cherries until the beginning of September.

Card 1/1

1. Fruits-Ripening

AUTHOR: Dolgoshov, V.I.

TITLE: Some Peculiarities of Fruiting of Forest Plants (Nekotoryye osobennosti plodonosheniya lesnykh porod) SOV/26-59-1-33/34

PERIODICAL: Priroda, 1959, Nr 1, pp 126 - 127 (USSR)

ABSTRACT: The author compares fruiting yields and periodicity in some forest trees and shrubs and deducts certain regularities (table 1). He points out that these peculiarities were incorporated in the classification of plants established by Academician A.A. Grossgeym and resulted in certain positional shifts in his system. There is 1 table.

ASSOCIATION: Institut geografii AN SSSR /Moskva (The Geographical Institute of the AS USSR /Moscow)

Card 1/1

DOLGOSHOV, V.I.

Haying time. Priroda 48 no.6:125-126 Je '59. (MIRA 12:5)

1. Institut geografii AN SSSR, Moskva.
(Hay--Harvesting)

GOVORUKHIN, A.P.; PSHENICHNAYA, A.M.; SMELAYA, T.V.; ZAYTSEVA, M.B.; Prinimali uchastiye: KALASHNIKOV, N.V.; PLAKSINA, A.I.; DOLGOSHOV, V.I., starshiy nauchnyy sotrudnik. PORTNYAGIN, I.I., otv.red.; ROGOVSKAYA, Ye.G., red.; BRAYNINA, M.I., tekhn.red.

[Agroclimatic reference book on Orel Province] Agroklimaticheskii spravochnik po Orlovskoi oblasti. Leningrad, Gidrometeor.izd-vo, 1960. 91 p. (MIRA 13:11)

1. Kursk. Gidrometeorologicheskaya observatoriya. 2. Upravleniye gidrometsluzhby tsentral'no-chernozemnykh oblastey (for Govorukhin, Pshenichnaya, Smelaya). 3. Institut geografii AN SSSR (for Dolgoshov). (Orel Province--Crops and climate)

DOLGOSHOV, V.I.

Partial and total killing of some plants by autumn frosts in the Moscow area. Sbor. rab. Mosk. gidromet. obser. no.1:81-84 '60. (MIRA 14:11)

(Moscow Province--Plants--Frost resistance)

DOLGOSHOV, V.I.

Flowering of orchards. Priroda 49 no.5:123 My '60.
(MIRA 13:5)

1. Institut geografii AN SSSR, Moskva.
(Fruit trees)

DOLGOSHOV, V.I.

Beginning of the berry season. Priroda no.6:127-128 Je '60. (MIRA 13:6)

1. Institut geografii AN SSSR, Moskva.
(Berries)

DOLGOSHOV, V.I.

Fruiting of the Norway maple. Priroda 49 no.11:126-217 N '60.
(MIRA 13:11)

1. Institut geografii AN SSSR, Moskva.
(Maple)

DOLGOSHOV, V.I.

Winter in the "black" forests. Priroda 50 no. 2:125 F '61.
(MIRA 14:2)

1. Institut geografii AN SSSR, Moskva.
(Winter)

DOLGOSHOV, V.I.

Start of blooming. Priroda 50 no.4:125 Ap '61. (MIRA 14:4)

1. Institut geografii AN SSSR, Moskva.
(Plants, Flowering of)

DOLGOSHOV, V.I.

European strawberry. Priroda 50 no.6:124-125 Je '61.
(MIRA 14:5)

1. Institut geografii AN SSSR, Moskva.
(Strawberries)

DOLGOSHOV, V.I.

Forest nuts. Priroda 50 no.9:126 S '61. (MIRA 14:8)

1. Institut geografii AN SSSR (Moskva)
(Hazel)

DOLGOSHOV, V.I.

Characteristics of the fruiting of wild strawberries and raspberries in the European part of the U.S.S.R. Mat. Pen. kom. Geog. ob-va SSSR no.1:91-99 '62. (MIRA 17:3)

DOLGOSHOV, V.I.

Ripening and picking time for major woody plants and shrubs. Geog. sbor. no.16:113-130 '63. (MIRA 16:6)
(Forest ecology) (Seed production)

DOLGOSHOV, V.I.

Fruit yield of major woody plants and shrubs. Geog. sbor. no.16: 131-149 '63. (MIRA 16:6)
(Seed production) (Forest ecology)

DOLGOSHOV, V.I.

First flowering tree. Priroda 51 no.5:125 My '62. (MIRA 15:5)

1. Institut geografii AN SSSR, Moskva.
(Alder)

DOLGOSHOV, V.I. (Moskva)

Contrasts of March. Priroda 52 no.3:126-127 '63. (MIRA 16:4)
(Natural history)

DOLGOSHOV, V.I. (Moskva)

Fructification and range. Priroda 52 no.9:127 '63.
(MIRA 16:11)

DOLGOSHOV, V.I. (Moskva)

Variation of the "working" period of green leaves in woody plants. Priroda 52 no.11:127-128 '63. (MIRA 17:1)

DOLGOSHOV, V.P.

Flow of sap in the Norway maple. maple. Priroda 50 no. 3:126 Mr '61. (MIRA 14:2)

1. Institut geografii AN SSSR, Moskva.
(Maple)

GOVORUKHIN, A.P.; SMELAYA, T.V.; PSHENICHNAYA, A.M.; ZAYTSEVA, M.B. Prinimali uchastiye: KALASHNIKOV, N.V.; PLAKSINA, A.I.; DOLGOSHOV, V.M., starshiy nauchnyy sotrudnik, PORTNYAGIN, I.I., otv.red.; MIRONENKO, Z.I., red.; VOLKOV, N.V., tekhn.red.

[Agroclimatic manual for Lipetsk Province] Agroklimaticheskii spravochnik po Lipetskoi oblasti. Leningrad, Gidrometeor.izd-vo, 1960. 94 p. (MIRA 14:1)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. Upravleniye gidrometeorologicheskoy sluzhby TSentral'no-Chernozemnykh oblastey. 2. Upravleniye gidrometsluzhby TSentral'no-Chernozemnykh oblastey (for Govorukhin, Smelaya, Pshenichnaya, Zaytseva). 3. Institut geografii Akademii nauk SSSR (for Dolgoshov).

(Lipetsk Province--Crops and climate)

DOLGOTOV, V. I., and [illegible]LYUK, B.

Forest strips and honey yeild. Pchelovodstvo 29, No 9, 1952.